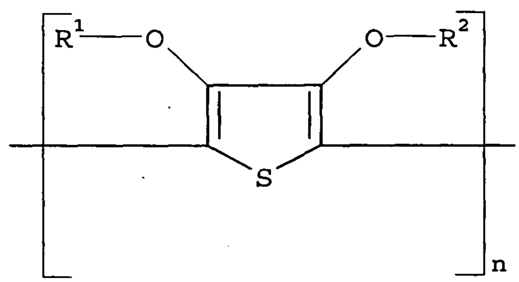
I CLAIM:

1. A substantially transparent conductive layer on a support, said layer comprising an intrinsically conductive polymer and a conductive metal non-uniformly distributed therein and forming of itself a conductive entity.

2. Conductive layer according to claim 1, wherein said intrinsically conductive polymer contains structural units represented by formula (I):



(I)

wherein n is larger than 1 and each of R^1 and R^2 independently represents hydrogen or an optionally substituted C_{1-4} alkyl group or together represent an optionally substituted C_{1-4} alkylene group or an optionally substituted cycloalkylene group, preferably an ethylene group, an optionally alkyl-substituted methylene group, an optionally C_{1-12} alkyl- or phenyl-substituted ethylene group, a 1,3-propylene group or a 1,2-cyclohexylene group.

3. Conductive layer according to claim 1, wherein said conductive metal is silver.

4. Conductive layer according to claim 3, wherein said conductive layer further contains a 1-phenyl-5-mercato-tetrazole compound in which the phenyl group is substituted with one or more electron accepting groups.

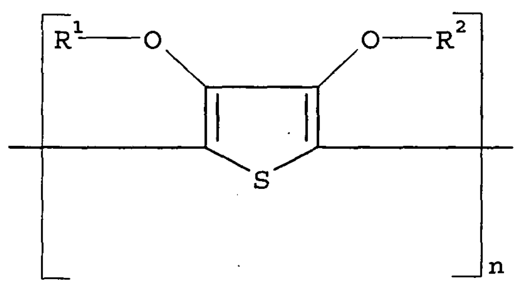
5. A process for preparing a substantially transparent conductive layer on a support, said layer comprising an intrinsically conductive polymer and a conductive metal non-uniformly distributed therein and forming of itself a conductive entity, comprising the step of: preparing said non-uniformly distributed conductive metal by a photographic process.

6. Process according to claim 5, wherein said photographic process comprises the steps of: coating the support with a layer containing said intrinsically conductive polymer and a nucleation agent; producing a non-continuous silver layer in said nucleation layer using silver salt diffusion transfer.

7. Process according to claim 6, wherein said nucleation agent is palladium sulphide.

8. Process according to claim 5, wherein said photographic process comprises the steps of: coating said support with a layer containing an intrinsically conductive polymer, silver halide and gelatin with a weight ratio of gelatin to silver halide in the range of 0.05 to 0.3, image-wise exposing said layer, and developing said exposed layer to produce said non-uniformly distributed silver.

9. Process according to claim 5, wherein said intrinsically conductive polymer contains structural units represented by formula (I):



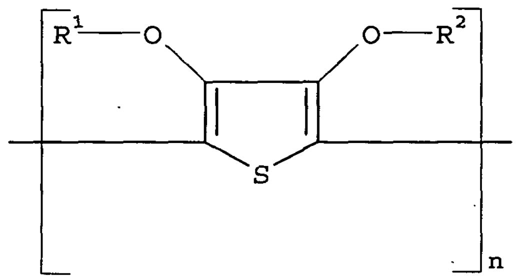
(I)

wherein n is larger than 1 and each of R^1 and R^2 independently represents hydrogen or an optionally substituted C_{1-4} alkyl group or together represent an optionally substituted C_{1-4} alkylene group or an optionally substituted cycloalkylene group, preferably an ethylene group, an optionally alkyl-substituted methylene group, an optionally C_{1-12} alkyl- or phenyl-substituted ethylene group, a 1,3-propylene group or a 1,2-cyclohexylene group.

10. A light emitting diode comprising a substantially transparent conductive layer on a support, said layer comprising an intrinsically conductive polymer and a conductive metal non-

uniformly distributed therein and forming of itself a conductive entity.

11. Light emitting diode according to claim 10, wherein said intrinsically conductive polymer contains structural units represented by formula (I):



(I)

wherein n is larger than 1 and each of R^1 and R^2 independently represents hydrogen or an optionally substituted C_{1-4} alkyl group or together represent an optionally substituted C_{1-4} alkylene group or an optionally substituted cycloalkylene group, preferably an ethylene group, an optionally alkyl-substituted methylene group, an optionally C_{1-12} alkyl- or phenyl-substituted ethylene group, a 1,3-propylene group or a 1,2-cyclohexylene group.

12. Light emitting diode according to claim 10, wherein said conductive metal is silver.

13. Light emitting diode according to claim 12, wherein said conductive layer further contains a 1-phenyl-5-mercato-tetrazole compound in which the phenyl group is substituted with one or more electron accepting groups.

14. A second light emitting diode prepared by a process for preparing a substantially transparent conductive layer on a support, said layer comprising an intrinsically conductive polymer and a conductive metal non-uniformly distributed therein and forming of itself a conductive entity, comprising the step of: preparing said non-uniformly distributed conductive metal by a photographic process.

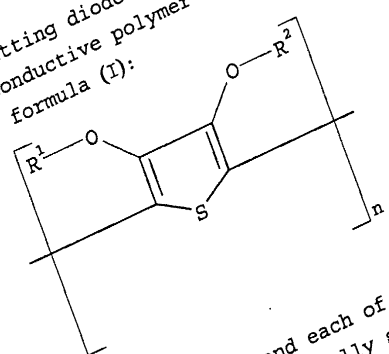
15. Second light emitting diode according to claim 14, wherein said photographic process comprises the steps of: coating the support

with a layer containing said intrinsically conductive polymer and a nucleation agent; producing a non-continuous silver layer in said nucleation layer using silver salt diffusion transfer.

16. Second light emitting diode according to claim 15, wherein said nucleation agent is palladium sulphide.

17. Second light emitting diode according to claim 14, wherein said photographic process comprises the steps of: coating said support with a layer containing an intrinsically conductive polymer, silver halide and gelatin with a weight ratio of gelatin to silver halide in the range of 0.05 to 0.3, image-wise exposing said layer, and developing said exposed layer to produce said non-uniformly distributed silver.

18. Second light emitting diode according to claim 14, wherein said intrinsically conductive polymer contains structural units represented by formula (I):

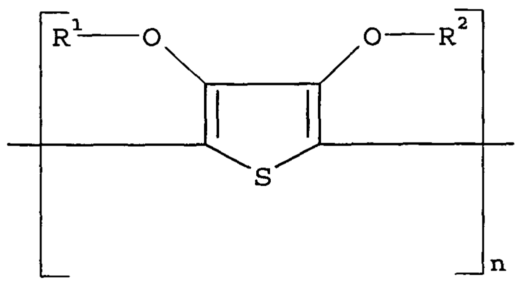


(I)

wherein n is larger than 1 and each of R^1 and R^2 independently represents hydrogen or an optionally substituted C_{1-4} alkyl group or together represent an optionally substituted C_{1-4} alkylene group or an optionally substituted cycloalkylene group, preferably an ethylene group, an optionally alkyl-substituted methylene group, an optionally C_{1-12} alkyl- or phenyl-substituted ethylene group, a 1,3-propylene group or a 1,2-cyclohexylene group.

19. A photovoltaic device comprising a substantially transparent conductive layer on a support, said layer comprising an intrinsically conductive polymer and a conductive metal non-uniformly distributed therein and forming of itself a conductive entity.

20. Photovoltaic device according to claim 19, wherein said intrinsically conductive polymer contains structural units represented by formula (I):



(I)

wherein n is larger than 1 and each of R^1 and R^2 independently represents hydrogen or an optionally substituted C_{1-4} alkyl group or together represent an optionally substituted C_{1-4} alkylene group or an optionally substituted cycloalkylene group, preferably an ethylene group, an optionally alkyl-substituted methylene group, an optionally C_{1-12} alkyl- or phenyl-substituted ethylene group, a 1,3-propylene group or a 1,2-cyclohexylene group.

21. Photovoltaic device according to claim 19, wherein said conductive metal is silver.

22. Photovoltaic device according to claim 21, wherein said conductive layer further contains a 1-phenyl-5-mercato-tetrazole compound in which the phenyl group is substituted with one or more electron accepting groups.

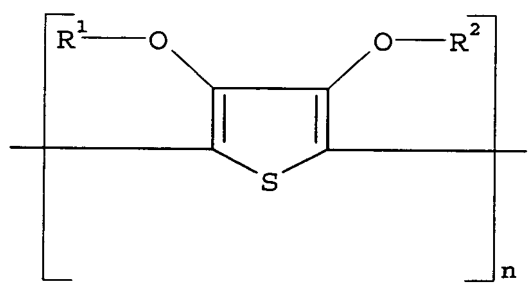
23. A second photovoltaic device prepared by a process for preparing a substantially transparent conductive layer on a support, said layer comprising an intrinsically conductive polymer and a conductive metal non-uniformly distributed therein and forming of itself a conductive entity, comprising the step of: preparing said non-uniformly distributed conductive metal by a photographic process.

24. Second photovoltaic device according to claim 23, wherein said photographic process comprises the steps of: coating the support with a layer containing said intrinsically conductive polymer and a nucleation agent; producing a non-continuous silver layer in said nucleation layer using silver salt diffusion transfer.

25. Second photovoltaic device according to claim 24, wherein said nucleation agent is palladium sulphide.

26. Second photovoltaic device according to claim 23, wherein said photographic process comprises the steps of: coating said support with a layer containing an intrinsically conductive polymer, silver halide and gelatin with a weight ratio of gelatin to silver halide in the range of 0.05 to 0.3, image-wise exposing said layer, and developing said exposed layer to produce said non-uniformly distributed silver.

27. Second photovoltaic device according to claim 23, wherein said intrinsically conductive polymer contains structural units represented by formula (I):

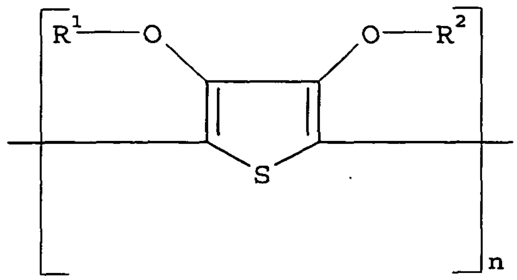


(I)

wherein n is larger than 1 and each of R^1 and R^2 independently represents hydrogen or an optionally substituted C_{1-4} alkyl group or together represent an optionally substituted C_{1-4} alkylene group or an optionally substituted cycloalkylene group, preferably an ethylene group, an optionally alkyl-substituted methylene group, an optionally C_{1-12} alkyl- or phenyl-substituted ethylene group, a 1,3-propylene group or a 1,2-cyclohexylene group.

28. A transistor comprising a substantially transparent conductive layer on a support, said layer comprising an intrinsically conductive polymer and a conductive metal non-uniformly distributed therein and forming of itself a conductive entity.

29. Transistor according to claim 28, wherein said intrinsically conductive polymer contains structural units represented by formula (I):



(I)

wherein n is larger than 1 and each of R^1 and R^2 independently represents hydrogen or an optionally substituted C_{1-4} alkyl group or together represent an optionally substituted C_{1-4} alkylene group or an optionally substituted cycloalkylene group, preferably an ethylene group, an optionally alkyl-substituted methylene group, an optionally C_{1-12} alkyl- or phenyl-substituted ethylene group, a 1,3-propylene group or a 1,2-cyclohexylene group.

30. Transistor according to claim 28, wherein said conductive metal is silver.

31. Transistor according to claim 30, wherein said conductive layer further contains a 1-phenyl-5-mercato-tetrazole compound in which the phenyl group is substituted with one or more electron accepting groups.

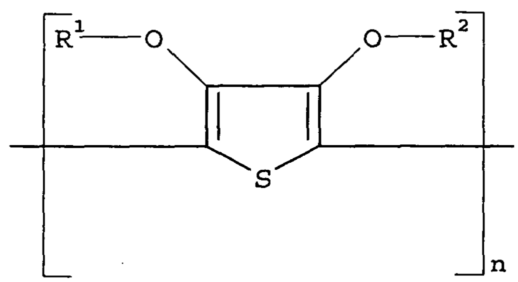
32. A second transistor prepared by a process for preparing a substantially transparent conductive layer on a support, said layer comprising an intrinsically conductive polymer and a conductive metal non-uniformly distributed therein and forming of itself a conductive entity, comprising the step of: preparing said non-uniformly distributed conductive metal by a photographic process.

33. Second transistor according to claim 32, wherein said photographic process comprises the steps of: coating the support with a layer containing said intrinsically conductive polymer and a nucleation agent; producing a non-continuous silver layer in said nucleation layer using silver salt diffusion transfer.

34. Second transistor according to claim 33, wherein said nucleation agent is palladium sulphide.

35. Second transistor according to claim 32, wherein said photographic process comprises the steps of: coating said support with a layer containing an intrinsically conductive polymer, silver halide and gelatin with a weight ratio of gelatin to silver halide in the range of 0.05 to 0.3, image-wise exposing said layer, and developing said exposed layer to produce said non-uniformly distributed silver.

36. Second transistor according to claim 32, wherein said intrinsically conductive polymer contains structural units represented by formula (I):

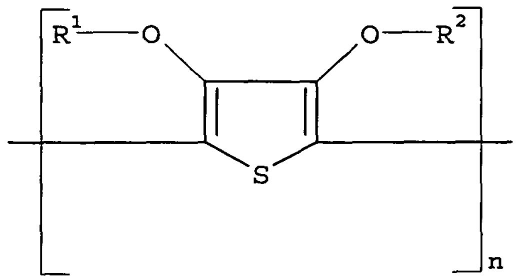


(I)

wherein n is larger than 1 and each of R^1 and R^2 independently represents hydrogen or an optionally substituted C_{1-4} alkyl group or together represent an optionally substituted C_{1-4} alkylene group or an optionally substituted cycloalkylene group, preferably an ethylene group, an optionally alkyl-substituted methylene group, an optionally C_{1-12} alkyl- or phenyl-substituted ethylene group, a 1,3-propylene group or a 1,2-cyclohexylene group.

37. An electroluminescent device comprising a substantially transparent conductive layer on a support, said layer comprising an intrinsically conductive polymer and a conductive metal non-uniformly distributed therein and forming of itself a conductive entity.

38. Electroluminescent device according to claim 37, wherein said intrinsically conductive polymer contains structural units represented by formula (I):



(I)

wherein n is larger than 1 and each of R^1 and R^2 independently represents hydrogen or an optionally substituted C_{1-4} alkyl group or together represent an optionally substituted C_{1-4} alkylene group or an optionally substituted cycloalkylene group, preferably an ethylene group, an optionally alkyl-substituted methylene group, an optionally C_{1-12} alkyl- or phenyl-substituted ethylene group, a 1,3-propylene group or a 1,2-cyclohexylene group.

39. Electroluminescent device according to claim 37, wherein said conductive metal is silver.

40. Electroluminescent device according to claim 39, wherein said conductive layer further contains a 1-phenyl-5-mercato-tetrazole compound in which the phenyl group is substituted with one or more electron accepting groups.

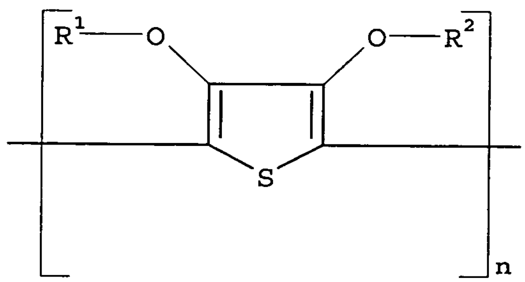
41. A second electroluminescent device prepared by a process for preparing a substantially transparent conductive layer on a support, said layer comprising an intrinsically conductive polymer and a conductive metal non-uniformly distributed therein and forming of itself a conductive entity, comprising the step of: preparing said non-uniformly distributed conductive metal by a photographic process.

42. Second electroluminescent device according to claim 41, wherein said photographic process comprises the steps of: coating the support with a layer containing said intrinsically conductive polymer and a nucleation agent; producing a non-continuous silver layer in said nucleation layer using silver salt diffusion transfer.

43. Second electroluminescent device according to claim 42, wherein said nucleation agent is palladium sulphide.

44. Second electroluminescent device according to claim 41, wherein said photographic process comprises the steps of: coating said support with a layer containing an intrinsically conductive polymer, silver halide and gelatin with a weight ratio of gelatin to silver halide in the range of 0.05 to 0.3, image-wise exposing said layer, and developing said exposed layer to produce said non-uniformly distributed silver.

45. Second electroluminescent device according to claim 41, wherein said intrinsically conductive polymer contains structural units represented by formula (I):



(I)

wherein n is larger than 1 and each of R^1 and R^2 independently represents hydrogen or an optionally substituted C_{1-4} alkyl group or together represent an optionally substituted C_{1-4} alkylene group or an optionally substituted cycloalkylene group, preferably an ethylene group, an optionally alkyl-substituted methylene group, an optionally C_{1-12} alkyl- or phenyl-substituted ethylene group, a 1,3-propylene group or a 1,2-cyclohexylene group.